

SECTION 123600 - CONCRETE COUNTERTOPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes concrete countertops.

1.3 ACTION SUBMITTALS

- A. Product Data: For each variety of concrete, concrete accessory and manufactured product.
- B. Shop Drawings:
 - 1. Include plans, sections, details, and attachments to other work.
 - 2. Show locations and details of joints.
 - 3. Show direction of grain or other directional pattern.
- C. Samples for Verification: For each concrete type indicated, in sets of Samples not less than 12 inches square.
 - 1. Include two or more Samples in each set and show the full range of variations in appearance characteristics expected in the completed Work.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For concrete countertops to include in maintenance manuals. Include product data for concrete-care products used or recommended by Installer, and names, addresses, and telephone numbers of local sources for products.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate concrete countertops similar to that required for this Project, and whose products have a record of successful in-service performance.
- B. Installer Qualifications: Fabricator of concrete countertops.
- C. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for fabrication and execution.
 - 1. Build mockup of small countertop.
 - 2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle concrete and related materials to prevent deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping, and other causes.
 - 1. Lift with wide-belt slings; do not use wire rope or ropes that might cause staining. Move, if required, using dollies with cushioned wood supports.
 - 2. Store on wood A-frames or pallets with nonstaining, waterproof covers. Arrange to distribute weight evenly and to prevent damage to concrete. Ventilate under covers to prevent condensation.

1.8 FIELD CONDITIONS

- A. Field Measurements: Verify dimensions of construction to receive concrete countertops by field measurements before fabrication and indicate measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 CONCRETE COUNTERTOPS

- A. Subject to compliance with requirements, provide manufacturer's standard, light-weight, reinforced concrete products:
 - 1. Color and Texture: As selected by Architect from manufacture's full range.
- B. Finish: Polished.

2.2 ADHESIVES, SEALANTS, AND CONCRETE ACCESSORIES

- A. General: Use only adhesives formulated for concrete that are recommended by their manufacturer for the application indicated.
- B. Concrete Adhesive: Epoxy adhesive, formulated specifically for bonding concrete to concrete, or other substrates, with an initial set time of not more than two hours at 70 deg F.
- C. Sealant for Countertops: Manufacturer's standard sealant that complies with applicable requirements in Section 079200 "Joint Sealants" and that will not stain the concrete it is applied to.
- D. Concrete Cleaner: Specifically formulated for concrete types, finishes, and applications indicated, as recommended by concrete producer. Do not use cleaning compounds containing acids, caustics, harsh fillers, or abrasives.
- E. Concrete Sealer: Colorless, stain-resistant sealer that does not affect color or physical properties of concrete surfaces, as recommended by concrete producer for application indicated.

2.3 CONCRETE FABRICATION, GENERAL

- A. Formulate and reinforce concrete for intended use to prevent fabricated units from containing cracks or seams that may impair structural integrity, function, or appearance.
 - 1. Repairs are acceptable provided they do not impair structural integrity or function and are not aesthetically displeasing, as judged by Architect.
- B. Mark concrete countertops for final locations to produce assembled countertop units with an overall uniform appearance.
- C. Fabricate concrete countertops in sizes and shapes required to comply with requirements indicated.
 - 1. Clean backs of concrete to remove rust stains and iron particles.
 - 2. Dress joints straight and at right angle to face unless otherwise indicated.
 - 3. Cut and drill sinkages and holes in concrete for anchors, supports, and attachments.
 - 4. Provide openings, reveals, and similar features as needed to accommodate adjacent work.
 - 5. Fabricate molded edges with machines having abrasive shaping wheels made to reverse contour of edge profile to produce uniform shape throughout entire length of edge and with precisely formed arris slightly eased to prevent snipping, and matched at joints between units. Form corners of molded edges as indicated with outside corners slightly eased unless otherwise indicated.

6. Finish exposed faces of concrete to comply with requirements indicated for finish of each concrete type required and to match approved Samples and mockups. Provide matching finish on exposed edges of countertops, splashes, and cutouts.
- D. Carefully inspect finished concrete units at fabrication plant for compliance with requirements for appearance, material, and fabrication. Replace defective units.

2.4 CONCRETE COUNTERTOPS

- A. Nominal Thickness: Provide thickness required, but not less than 3/4 inch. Gage backs to provide units of identical thickness.
- B. Edge Detail: Straight, slightly eased at top.
- C. Splashes: Provide 3/4-inch- thick backsplashes and end splashes unless otherwise indicated.
 1. Height: 4 inches.
 2. Top-Edge Detail: Straight, slightly eased at corner.
- D. Joints: Fabricate countertops without joints.
- E. Cutouts and Holes:
 1. Counter-Mounted Fixtures: Prepare countertops in shop for field cutting openings for counter-mounted fixtures. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.
 2. Fittings: Drill countertops in shop for plumbing fittings, undercounter soap dispensers, and similar items.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates to receive concrete countertops and conditions under which concrete countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of concrete countertops.
- B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of concrete countertops.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Advise installers of other work about specific requirements for placement of inserts and similar items to be used by concrete countertop Installer for anchoring concrete countertops. Furnish installers of other work with Drawings or templates showing locations of these items.
- B. Before installing concrete countertops, clean dirty or stained concrete surfaces by removing soil, stains, and foreign materials. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives and rinse with clear water. Allow concrete to dry before installing.

3.3 CONSTRUCTION TOLERANCES

- A. Variation from Level: Do not exceed 1/8 inch in 96 inches, 1/4 inch maximum.
- B. Variation in Joint Width: Do not vary joint thickness more than one-fourth of nominal joint width.
- C. Variation in Plane at Joints (Lipping): Do not exceed 1/64-inch difference between planes of adjacent units.
- D. Variation in Line of Edge at Joints (Lipping): Do not exceed 1/64-inch difference between edges of adjacent units, where edge line continues across joint.

3.4 INSTALLATION OF COUNTERTOPS

- A. Provide installation method recommended by manufacturer or fabricator, including the following:
 - 1. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.
 - a. Install countertops over subtops with full spread of water-cleanable epoxy adhesive.
 - 2. Install countertops by adhering to supports with epoxy adhesive.
- B. Do not cut concrete in field unless otherwise indicated. If concrete countertops or splashes require additional fabrication not specified to be performed at Project site, return to fabrication shop for adjustment.
- C. Set concrete countertops to comply with requirements indicated. Shim and adjust concrete to locations indicated, with uniform joints of widths indicated and with edges and faces aligned according to established relationships and indicated tolerances. Install anchors and other attachments indicated or necessary to secure concrete countertops in place.

- D. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Use power saws with diamond blades to cut concrete. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.
- E. Install backsplashes and end splashes by adhering to wall with water-cleanable epoxy adhesive. Leave 1/16-inch gap between countertop and splashes for filling with sealant. Use temporary shims to ensure uniform spacing.
- F. Apply sealant to joints and gaps; comply with Section 079200 "Joint Sealants." Remove temporary shims before applying sealant.

3.5 ADJUSTING AND CLEANING

- A. In-Progress Cleaning: Clean countertops as work progresses. Remove adhesive, grout, mortar, and sealant smears immediately.
- B. Remove and replace concrete countertops of the following description:
 - 1. Broken, chipped, stained, or otherwise damaged concrete. Concrete may be repaired if methods and results are approved by Architect.
 - 2. Defective countertops.
 - 3. Defective joints, including misaligned joints.
 - 4. Interior concrete countertops and joints not matching approved Samples and mockups.
 - 5. Interior concrete countertops not complying with other requirements indicated.
- C. Replace in a manner that results in concrete countertops matching approved Samples and mockups, complying with other requirements, and showing no evidence of replacement.
- D. Clean concrete countertops no fewer than six days after completion of sealant installation, using clean water and soft rags. Do not use wire brushes, acid-type cleaning agents, cleaning compounds with caustic or harsh fillers, or other materials or methods that may damage concrete.
- E. Sealer Application: Apply concrete sealer to comply with concrete producer's and sealer manufacturer's written instructions.

END OF SECTION 123600